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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/814,371 | 03/22/2001 | Graham McCreath | 8117-14 | 4297 |

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| EXAMINER | |
|---|---|
| WEBER, JON P | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1651 | |

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/814,371 | MCCREATH ET AL. | |
| | Examiner | Art Unit | |
| | Jon P Weber, Ph.D. | 1651 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3,5,9,12-15,30 and 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,9,12-15,30 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 December 2003 has been entered.

Claims 1-3, 5, 9, 12-15 and 30-31 have been presented for examination.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 30 is rejected under 35 U.S.C. 101 because it is impossible to 1) precipitate and 2) separate and recover simultaneously. These are necessarily sequential physical operations.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Vukovich et al. (1980) or Lord (US 6,037,457).

Vukovich et al. (1980) teach that fibrinogen can be highly purified using HIC with for example, butyl-sepharose.

Lord (US 6,037,457) teaches that recombinantly produced fibrinogen can be purified by various techniques known in the art including: precipitation and HIC (column 6, lines 36-52).

The claim does not specify the fluid from which fibrinogen is purified. The "pre-selected A chain integrity" only distinguishes between fibrinogen that was incidentally purified during some other process from fibrinogen that was intentionally purified. The specifics of the "pre-selection" are not set forth in the claim. While claims must be "given the broadest reasonable interpretation consistent with the specification", "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from `reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." *In re Prater*, 162 USPQ 541, 550 -51 (CCPA 1969). This is impermissible importation of subject matter from the specification into the claim.

***Claim Rejections - 35 USC § 103***

Claims 1-3, 5, 9, 12-15 and 30-31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Garner et al. (US 5,639,940) in view of Tripodi (WO 9213495) and further in view of Vukovich et al. (1980) and Lord (US 6,037,457).

It is argued that the claims now recite "pre-selected A chain integrity", a limitation not taught or suggested by any of the relied upon art. It is argued that Tripodi only adds ϵ-aminocaproic acid as a buffer component of which PEG is the main ingredient. It is urged that Tripodi's use of PEG defeats the purpose of the invention because it co-precipitates casein and fibrinogen. It is argued that ϵ-aminocaproic acid has been found by applicants to be superior in stabilizing fibrinogen in milk to proteases. It is argued that the methods herein allow various levels of A chain integrity to be pre-selected. It is urged that neither Lord nor Vukovich teach a two-step process. It is urged that the invention as a whole has not been considered and that it is "impressible" (sic) for the examiner to pick and choose sections of the specification out of context. The arguments speak of the transfer of the protease to the whey phase that does not occur in Tripodi the same way as instantly.

The newly added limitation to "pre-selected A chain integrity" is not found limiting to the claimed method as discussed *supra*. Arguments to this new limitation are not probative of patentability. further, the various levels of purity of, for example, F1 fibrinogen at page 10-11 of the disclosure are not in evidence in the claims.

As previously argued, the fact that ϵ-aminocaproic acid is a buffer component is sufficient to establish its use in the method. Tripodi does not explicitly indicate why they added it, however, the ability of ϵ-aminocaproic acid to inhibit plasmin and related enzymes is known to those of skill in the art. It is presumed that skilled artisans do not need to be told why ϵ-aminocaproic acid has been added to the buffer. Further, even if ϵ-aminocaproic acid has not been added for the same purpose, a rejection under 35 U.S.C. § 103 based upon the combination of references is not deficient solely because the references are combined based upon a reason or

technical consideration which is different from that which resulted in the claimed invention. *Ex parte Raychem Corp*, 17 U.S.P.Q. 2d 1417. Finally, it is noted that only claim 3 has the limitation to allegedly superior $\epsilon$-aminocaproic acid, and here it is only one of several possible members of a Markush group.

The arguments re a two step process are not probative. The claims recite open "comprising" language, allowing for any number of steps. Claim 15 allows for steps (a) and (b) to be repeated, thereby increasing the number of steps to an unstated level. Claim 2 adds a step of HIC, thereby obtaining at least a three step process according to the accounting of the claims. How many steps one chooses to identify depends too much on how steps are counted. The beginning and end of a step is not well-defined either instantly or generally.

The arguments re PEG as precipitant are not probative. First, no specific precipitant is required by the claims. Second, the claims do not require separation of fibrinogen from casein. Third, it has already been remarked that PEG is specifically identified as a suitable precipitant in the instant disclosure. The disclosure indicates at page 11 that PEG co-precipitates casein and fibrinogen. However, this discussion suggests that this is a method of obtaining the desired proteins!

The invention as a whole has been considered. It is a process of taking a fluid, milk, containing fibrinogen (transgenically produced), and carrying out a minimum of two steps: 1) precipitation followed by 2) separation. A further third step of HIC may be used. The references have been combined as a whole as well. The primary reference, Garner et al. (US 5,639,940), only lacks precipitating fibrinogen from milk in the presence of one or more of lysine, lysine analog, or $\epsilon$-aminocaproic acid, or the specific HIC chromatography. The secondary references

fill in the blanks by establishing that the precipitation is performed in the presence of ϵ-aminocaproic acid and that it is routine in the art to use HIC for further purification. It is proper to combine these references because each of them is directed to purifying fibrinogen from fluids such as milk. Hence, there is reasonable motivation to combine the references. One of ordinary skill in the art would know that precipitation, separation, and HIC are all suitable methods of purifying fibrinogen based on the teachings of the Garner et al. A skilled artisan would look to the relevant fibrinogen purification art to find out further details of the process, including using ϵ-aminocaproic acid in the precipitation step.

The comments re transfer of the protease to the whey phase is not understood either in the remarks or in the context of the disclosure. The whey is the liquid that remains after milk solids, primarily casein, have been precipitated. Hence, there is no "transfer" taking place. The whey is just the residual liquid remaining from the milk. Whey is known to contain many proteins including several enzymes. If the proteases remain in the liquid and are not precipitated, they are not transferred, they simply remain soluble. It is not clear how this is different in Tripodi.

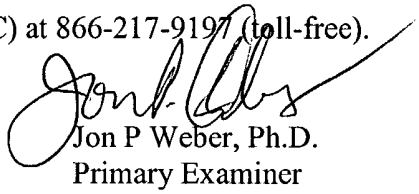
Applicant's arguments filed 15 December 2003 have been fully considered but they are not persuasive. The rejection under 35 U.S.C. 103 is adhered to for the reasons of record and the additional reasons above.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon P Weber, Ph.D. whose telephone number is 571-272-0925. The examiner can normally be reached on daily, off 1st Fri, 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jon P Weber, Ph.D.
Primary Examiner
Art Unit 1651

JPW
17 March 2004